CLAIMS

1. ~~An expansion~~ module for controlling and displaying presentations stored in a handheld computing device having an expansion slot, a microcontroller, and system memory, said expansion module comprising:

a communication interface for attaching the expansion module to the handheld computing device's expansion slot; said expansion slot providing access to the handheld computing device's microcontroller's address and data space;

memory for storing control software and image data, the microcontroller executing control software to decode the image data before image data is forwarded to the expansion module via the expansion slot; and

an external display controller for converting decoded image data to electronic signals for delivery to an external display device.

2. The expansion module of claim 1, wherein the communication interface is implemented as an application specific integrated circuit (ASIC).

3. The expansion module of claim 1, wherein the communication interface is implemented as a field programmable gate array (FPGA).

4. The expansion module of claim 1, wherein the communication interface converts image data decoded by the microcontroller to a format that ~~meets the requirements~~ of the external display controller.

5. The expansion module of claim 4, wherein the communication interface is a 16-bit to 32-bit data multiplexor.

6. The expansion module of claim 1, wherein the expansion slot is a 68-pin Springboard connector.

7. The expansion module of claim 1, wherein the memory for storing control software and image data is flash ROM memory.

8. The expansion module of claim 7, wherein when the expansion module is attached to the handheld computing device, the flash ROM memory is recognized as an extension of the system memory.

9. The expansion module of claim 1, wherein the external display controller is configured to query the external display device for display requirements and to convert decoded image data to electronic signals that match the external display requirements.

10. The expansion module of claim 1, wherein the external display controller includes a memory buffer for temporarily storing decoded image data.

11. The expansion module of claim 1, wherein the handheld computing device communicates with the expansion module using wireless technology.

12. The expansion module of claim 1, further comprising an external memory interface for allowing an external memory attach to the expansion module.

13. The expansion module of claim 12, wherein the external memory interface is a flash memory connector.

14. The expansion module of claim 1, further comprising an audio interface for connecting to an audio device.

15. The expansion module of claim 1, further comprising a graphic transmitter for converting parallel digital output generated by the external display controller to serial digital output.

16. The expansion module of claim 1, further comprising a microcontroller for decoding image data independent from the handheld computing device's microcontroller.

17. The expansion module of claim 1, further comprising a connector for connecting to a power source.

18. The expansion module of claim 17, wherein the power source is an AC outlet.

19. ~~The expansion module of claim 17,~~ wherein the power source is a feedback power line from the external display device.

20. The expansion module of claim 1, wherein the execution of the control software can be remotely controlled by a remote control system.

21. A method for loading a presentation on a handheld computing device, comprising:

writing image data to a driver, the driver including data compression and presentation organizer software;

invoking compression software to compress image data;

invoking organizer software to store compressed image data in a presentation database; and

executing control software in memory causing a microcontroller to transfer the presentation database to the handheld computing device.

22. The method of claim 21, wherein said handheld computing device is attached to an expansion module for displaying the presentation data on an external display, said handheld computing system having a first memory, and said expansion module ~~having a second~~ memory.

23. The method of claim 22, wherein the presentation database is transferred to the first memory.

24. The method of claim 22, wherein the presentation database is transferred to the second memory, wherein the second memory is an extension of said first memory.

25. The method of claim 22, wherein the control software is executed in the first memory.

26. The method of claim 22, wherein the control software is executed in the second memory.

27. The method of claim 22, wherein the microcontroller is included in the handheld computing device.

28. The method of claim 22, wherein the microcontroller is included in the expansion module.

29. The method of claim 22, further comprising:

decoding the image data included in presentation database and forwarding it to an external display controller in the expansion module.

30. The method of claim 29, further comprising:

the external display controller converting decoded image data to electronic signals for delivery to an external display device.

31. A method for controlling and displaying presentations stored in a handheld computing system on an external display using an expansion module, said method comprising:

executing control software stored in the handheld computing system's memory via a microcontroller in the handheld computing system;

displaying control interface on the handheld computing system display;

processing presentation data stored in the handheld computing system's memory, in response to user interaction with the control interface;

forwarding the processed presentation data to the handheld computing system's external display controller;

converting the presentation data to electronic signals for rendering images on an external display device via the external display controller.

32. The method of claim 31, wherein the handheld computing system comprises a handheld computing device and an expansion module attached to the handheld computing device; said expansion module for providing communication means between the handheld computing device and an external display device.

33. The method of claim 32, wherein the microcontroller for executing control software is included in the handheld computing device.

34. The method of claim 32, wherein the microcontroller for executing control software is included in the expansion module.

35. The method of claim 31, wherein the control interface displays a reference to one or more presentation databases such that in response to a user selecting a presentation database, one or more slides are displayed.

36. The method of claim 35, further comprising:

selecting one or more of the displayed slides to be included in a slide show for display on an external display.

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37. The method of claim 36, further comprising:

rearranging display order of slides in the slide show by moving a box representing a slide in a first display position to a second display position.

38. The method of claim 37, further comprising:

setting the length of the slide show by interacting with a preference menu provided by the control interface.

39. The method of claim 38, further comprising:

starting a slide show by interacting with the control interface.

40. The method of claim 38, further comprising:

promoting the display of a slide in the slide show by interacting with the control interface.

41. ~~A method of loading program code from~~ memory in a handheld computing system onto on-chip memory in an external microcontroller in an expansion module; a communication interface connecting the expansion module and the handheld computing system, said communication interface having a register, said method comprising:

the external microcontroller initiating a read from the register;

the communication interface signaling a wait to the external microcontroller;

the communication interface submitting a request to receive program code from the handheld computing system;

a microcontroller in the handheld computing system fetching program code from memory;

embedding the fetched program code in an instruction;

forwarding the instruction to the communication interface; and

storing the instruction in the register.

42. The method of claim 41, further comprising:

the communication interface releasing the wait signal; and

the external microcontroller processing the instruction stored in the register to determine how to ~~handle program code embedded therein.~~

43. The method of claim 42, wherein the instruction includes a function, program code, and a memory address in the on-chip memory, said method further comprising:

if the function is a load function then storing the program code in the memory address;

if the function is a jump function then executing program code stored in the on-chip memory starting at the memory address.

44. The method of claim 43 wherein the external microcontroller executes the program code stored in the on-chip memory, further comprising:

the external microcontroller initiating a read from the register;

the communication interface signaling a wait to the external microcontroller;

the communication interface submitting a request to receive data from the handheld computing system;

a microcontroller in the handheld computing system fetching data from memory;

embedding the fetched data in an instruction;

forwarding the instruction to the communication interface; and

storing the instruction in the register.

45. The method of claim 44, further comprising:

the communication interface releasing the wait signal; and

the program code executed by the external microcontroller decoding the data.

46. The expansion module of claim 1, further comprising a switch for turning the expansion module on or off.

47. A method for displaying a presentation on a display device, comprising:

compressing image data created by one or more presentation software;

storing compressed image data in a presentation database on a desktop computer;

executing a first control software running on the desktop computer to transfer the presentation database to a first handheld computing device;

executing a second control software running on the first handheld computing device to transfer the presentation database to a second handheld computing device capable of processing image data included in the presentation database and displaying said image data on a display device.

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